We're Talking To Our Neighbors

Lowering Potential Air Toxics Emissions By Visiting Local Businesses

A joint program of:

Tucson Unified School District (TUSD), Title I Family Centers and Sonora Environmental Research Institute, Inc. (SERI)

Workshop Overview

- Background of the Community Assist of Southern Arizona (CASA) program
- Results and lessons learned from the CASA Business Visit Program
- Guidelines for setting up your own business visit program
- Roleplaying

CASA's Beliefs

- A better understanding of the possible environmental health risks is the first step to taking action to reduce exposure and improve health
- The participants living in the affected community are better able to identify the particular needs of their own neighborhoods

Specific Aims

- To conduct a neighborhood participatory action plan that engages the community in all aspects of the project and results in reduced exposure to toxics
- To strengthen the community's ability to make informed environmental health improvement choices and to participate in long-term solutions

Specific Aims

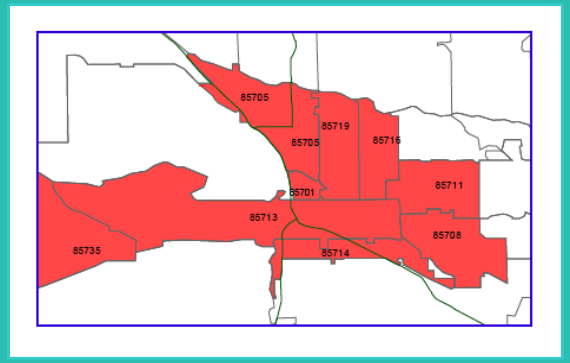
- To establish a pollution prevention plan for specific industries
- To modify zoning codes to reduce community risk to environmental stresses

CASA Funding

- EPA Community Action for a Renewed Environment (CARE) grant
- Tucson Fire Fighters Association
- Alcoa Foundation
- SERI and TUSD, Title I Family Centers
- Private donations

CASA Activities

- Identify neighborhoods at risk and air toxics of concern
- Conduct neighborhood activities
  - 2,000 home visits
  - community mapping
  - air monitoring
- Conduct business activities
  - 500 business visits
  - workshops



Community Participatory Action

Develop a Strong Partnership

TUSD, Title I Family Centers → centers that already reach the community in need with valuable services

SERI → an organization with technical expertise and experience

CASA

Community Assist of Southern Arizona

Rose Family Center

Community Advisory Board

- Citizens
- Tucson Fire Department
- Community Food Bank
- Rincon Rotary
- Trees for Tucson
- Pima County Supervisor Richard Elías
- Tucson City Council Member Steve Leal
- City of Tucson Community Services Department
- Pima County Department of Environmental Quality
- Arizona Department of Environmental Quality
- Southeast Arizona Area Health Education Center
- Tucson/Pima County Household Hazardous Waste Center
- Alcoa Fastening Systems
- Tucson Water
- Pima Community College
- United Way
- St. Elizabeth of Hungary Clinic
- US Congressman Raúl Grijalva
- The University of Arizona

Identifying Neighborhoods

- Developed a rating system for air toxics
- Calculated a score for each facility
- Mapped facilities and scores
- Identified areas, toxics and industries of concern

Ratings for Hexachlorobenzene and Toluene

Carcinogenicity

Persistence

Hazard

Health (Oral LD_{50} Rat or Inhalation LC_{50} Rat)

Hazardous Air Pollutant	Carcinogen (NC-Not Classified, N-No, Y-Yes)	Rat.	Repro/ Develop (I-Inconclusive, A-Animal, H-Human, N-No)	Rat.	Persistence W	Persistence SO	Persistence SE	Persistence A	Bio.	Haz. Rat.	Hlth. Rat.	Chronic Hlth. Rating	Score
Hexachlorobenzene	Probable	6	A, H	6	6	6	6	6	8	2	1	6	53
Toluene	NC	2	A, H	6	0	0	4	4	0	6	3	2	27

Reproductive/developmental

Bioaccumulation

Chronic Health (RfD, RfC or MRL)

Comparison of Rating Systems Using Davis et al. (1994) Criteria

CRITERIA	MTI	UTN	EDF	IRCHS	EB	ANPI	SERI
HEALTH							
carcinogenicity, mutagenicity, genotoxicity	X	X	X	X	X	X	X
systemic (non-carcinogenic) or general health effects	X	X	X	X		X	X
aquatic toxicity	X	X		X	X	X	X
mammalian toxicity	X	X		X		X	X
developmental/reproductive toxicity	X	X		X		X	X
physical hazard	X		X	X		X	X
plant toxicity						X	
terrestrial non-mammalian toxicity						X	
general ecological effects				X	X	X	
EXPOSURE							
degradation or transformation potential	X	X	X	X		X	X
mobility and partitioning	X	X	X	X		X	X
estimated dose, environmental occurrence, concentration, or amount released	X		X		X	X	
exposure frequency or intensity			X		X		

MTI - Minnesota Toxicity Index
EDF - Environmental Defense Fund CALTOX Values
IRCHS - Indiana Relative Chemical Hazard Ranking System

UTN - University of Tennessee Total Hazard Score
EB - ICI Environmental Burden (EB) Methodology
ANPI - Australian National Pollutant Inventory System

Comparison of SERI Top Ten Ranked Chemicals to Other Ranking Systems

SERI	MTI	IRCHS	ANPI	ANPI H+E
Polychlorinated biphenyls (PCBs)	Dioxin and like Compounds	Hydrazine	Hexavalent Chromium	Hexavalent Chromium
Arsine	Mercury and Compounds	Acrolein	Dichloromethane	1,1,2,2-Tetrachloroethane
Dioxin and like Compounds	Polychlorinated biphenyls (PCBs)	Ethylene Oxide	Cadmium and compounds	Arsenic and Compounds
Hexavalent Chromium	Polycyclic Organic Matter	Hydrogen Fluoride	Sulfuric Acid	Arsine
Hexachlorobenzene	Cadmium and compounds	Vinyl Chloride	Xylenes (Mixed Isomers)	Cadmium and compounds
Cadmium and Compounds	Hexavalent Chromium	Benzene	Arsenic and Compounds	1,3-Dichloropropene
Lead and Compounds	Hexachlorobenzene	Epichlorohydrin (EP Resin)	Lead and Compounds	Beryllium and Compounds
Selenium and compounds	Antimony and Compounds	1,3-Butadiene	Trichloroethylene	Inorganic Cyanide Compounds
Mercury and compounds	Carbon Tetrachloride	Formaldehyde	Benzene	Methyl Bromide (Bromomethane)
Polycyclic Organic Matter	Selenium and Compounds	Carbon Tetrachloride	1,3-Butadiene	Ethylene Dibromide (Dibromoethane)

MTI - Minnesota Toxicity Index
IIRCHS - Indiana Relative Chemical Hazard Ranking System
ANPI - Australian National Pollutant Inventory System
ANPI H+E - Australian National Pollutant Inventory System health and environmental criteria only

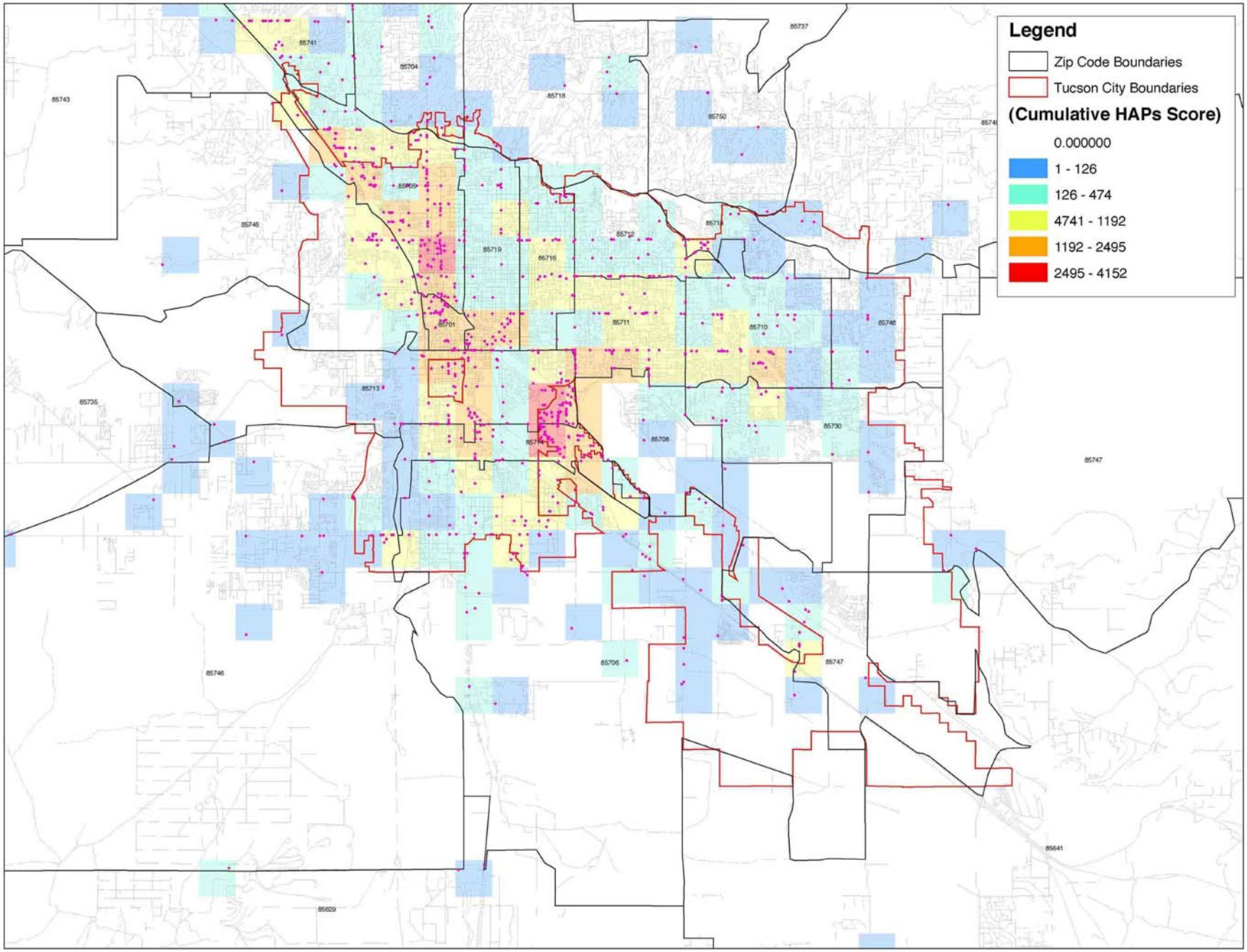
Facility Rating Table

Industry sector code

Hazard score for facility

COMPANY NAME	ZIP	C1	C2	SCORE	CHEM 1	CHEM 2	CHEM 3	CHEM 4	CHEM 5	CHEM 6
Arizona Paint & Body Shop	85705	AB		145	61	62	67	81	84	88
Arizona Petroleum Products	85719	FS		79	46	35	58	51		
Arizona Pima Chemical Pool Svc	85713	CH		25	23					
Arizona Plating & Coating Co.	85745	PL	SC	221	9	36	47	61	62	81

Code for each potential emission


Legend
Zip Code Boundaries
Tucson City Boundaries
(Cumulative HAPs Score)
0.000000
1 - 126
126 - 474
4741 - 1192
1192 - 2495
2495 - 4152
85737
85741
85704
85743
85718
85750
85745
85719
85716
85712
85711
85710
85748
85701
85713
85735
85730
85708
85747
85746
85706
85641
85629

Statistics of Target Area

Zip Code	85705	85713	85706	85714	85719	85701
# of Facilities	149	125	73	67	38	33
HAPS Score	18,342	14,185	8,620	8,615	4,389	2,192
Gas stations	35	33	12	28	17	2
% Hispanic	32	62	79	87	19	45
% language other than English spoken at home	31	54	62	75	23	47
% Below poverty level	21	21	22	29	15	23

1. # of gas stations from State of Arizona Bureau of Weights and Measures
2. Populations figures from 2000 US Census

Potential Emissions in Target Area

# OF FACILITIES	CHEMICAL
170	Toluene
160	VOCs
123	Methyl Ethyl Ketone
120	Xylenes (mixed isomers)
114	Methyl Isobutyl Ketone
101	Napthalene
44	Hexamethylene Diisocyanate
42	Hydroquinone
42	Bis(2-Ethylhexyl)Phthalate
42	Ethylene Glycol

Sources in Target Area

# OF FACILITIES	SOURCE
108	AUTO BODY PAINT & REPAIR
46	PRINTING
29	GENERATOR
21	FUEL STORAGE
14	PLATING
14	SURFACE COATING
13	CHLORINE
13	OTHER
11	PLASTIC MATERIALS & RESINS

Business Activities

- Research pollution prevention strategies for businesses
- Develop educational material
- Conduct business visits
- Hold workshops and meetings

Business Visits

Conducted by Promotoras

- Trained lay environmental health workers
- Neighbors within the target community
- Involved in the life of their neighborhood

CASA
Community Assist of Southern Arizona

CASA Promotoras

Training for Business Visits

- Promotoras already experienced in home visits
- New skill set needed to conduct the work
- Required a different training than for home visits

Training Different for Business Visits

- Vocabulary of the visit
- Language: Spanish and English
- Approach
- Skill set

Vocabulary

Choose words appropriate to the audience

- Families versus businesses
- More technical terms
- Processes businesses can change

Language

- Most shop owners in the target area speak Spanish, while others speak only English
- The Promotoras are developing their English skills

Approach

- Use a mutually beneficial message. “Your business effects our health, your health and that of your neighbors.”
- Communicate to businesses that Promotoras are not from government agencies
- Speak with the authority of data
- Use materials

Learning a New Skill Set

- Promotoras must learn and be comfortable with new technical information
- Training may take extra time
- Collaborators can help
  - Shop owners
  - Trade associations
  - Agencies

Luz Rubio, Executive Director of the Arizona Office of the Automotive Service Association

Mark Salem, owner of Salem Boys Automotive and Environmental Health Promotora Sandra López

Business Visits Forms

FOR OFFICE USE ONLY
ID #: _____
Date Entered: _____ Entered By: _____

VISITAS DE NEGOCIOS

Llenar Secciones I y II antes de la visita.

Sección I: Información del Negocio	
Nombre del negocio:	
Domicilio:	Zip code:
Número de Teléfono:	
Existe este negocio en la lista de su cuarderno?	☐ SI ☐ NO
Sección II: Datos de las Citas	
Fecha de llamada para solicitar una cita:	
Nombre de persona del negocio con quien se acordó la cita:	
Fecha de cita acordada para:	
Tiempo de cita para:	☐ a.m. ☐ p.m. (Marcar una)
☐ No se hablamos a este negocio antes de visitarlos.	
Notas:	
Iniciales de las Promotoras: _____	_____

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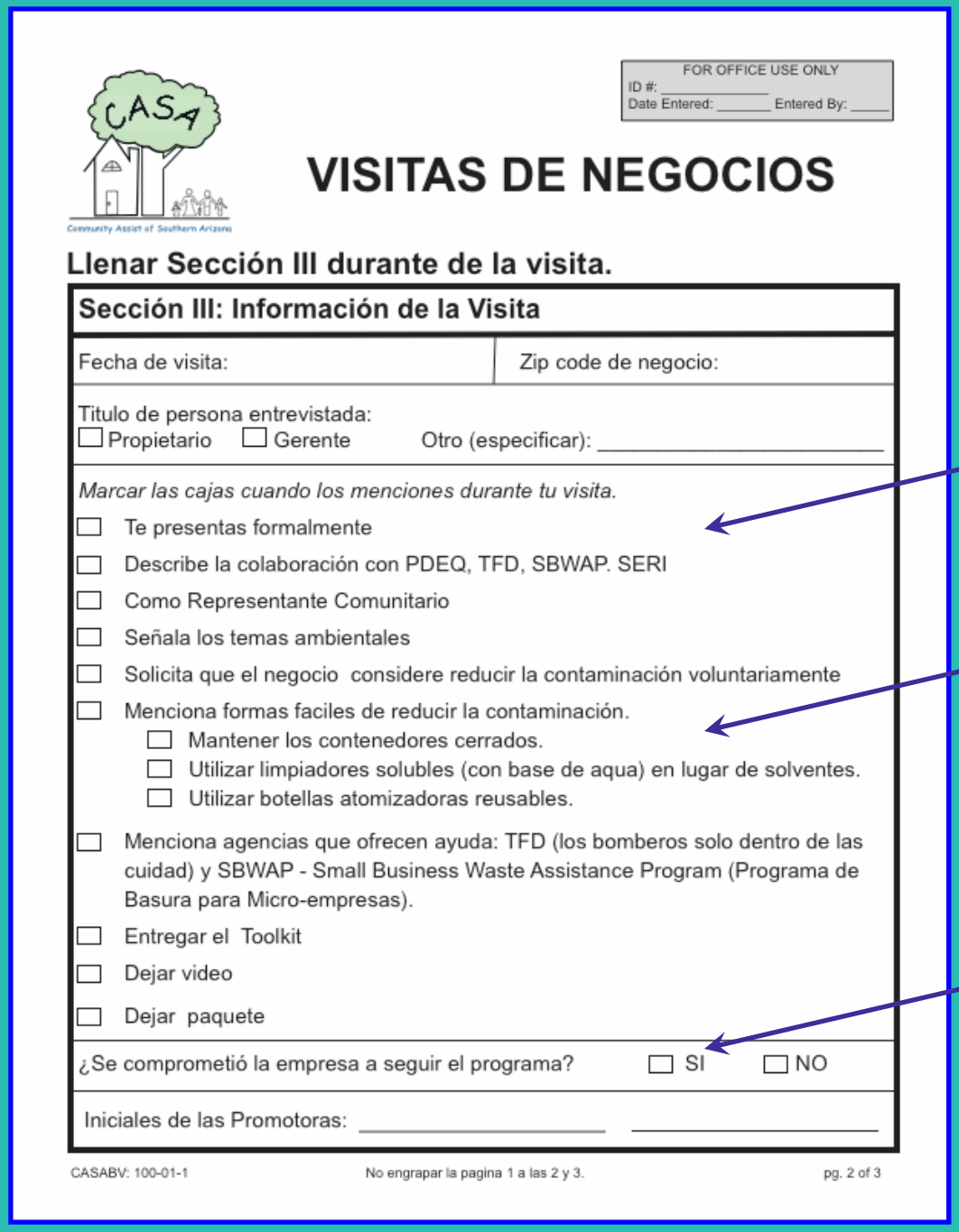
Business contact information

Appointment information if business contacted before visit

Business Visits Forms



FOR OFFICE USE ONLY
ID #: _____
Date Entered: _____ Entered By: _____

VISITAS DE NEGOCIOS

Llenar Sección III durante de la visita.

Sección III: Información de la Visita

Fecha de visita: | Zip code de negocio:

Titulo de persona entrevistada:
☐ Propietario ☐ Gerente Otro (especificar): _____

Marcar las cajas cuando los menciones durante tu visita.

- ☐ Te presentas formalmente
- ☐ Describe la colaboración con PDEQ, TFD, SBWAP. SERI
- ☐ Como Representante Comunitario
- ☐ Señala los temas ambientales
- ☐ Solicita que el negocio considere reducir la contaminación voluntariamente
- ☐ Menciona formas faciles de reducir la contaminación.
  - ☐ Mantener los contenedores cerrados.
  - ☐ Utilizar limpiadores solubles (con base de aqua) en lugar de solventes.
  - ☐ Utilizar botellas atomizadoras reusables.
- ☐ Menciona agencias que ofrecen ayuda: TFD (los bomberos solo dentro de las cuidad) y SBWAP - Small Business Waste Assistance Program (Programa de Basura para Micro-empresas).
- ☐ Entregar el Toolkit
- ☐ Dejar video
- ☐ Dejar paquete

¿Se comprometió la empresa a seguir el programa? ☐ SI ☐ NO

Iniciales de las Promotoras: _____ _____

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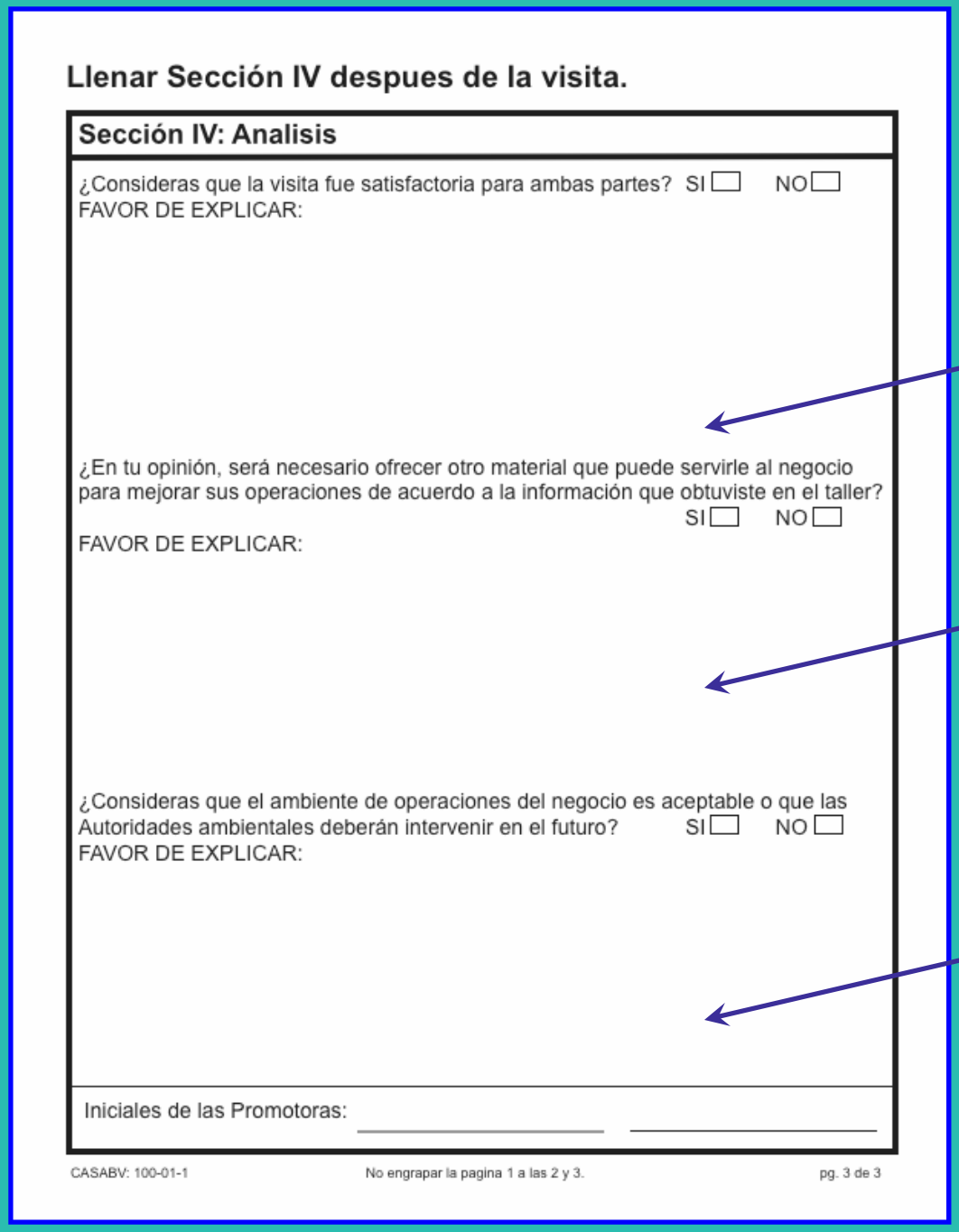
Explain the collaboration

Mention methods to reduce pollution

Ask business to participate

Business Visits Forms



Llenar Sección IV despues de la visita.

Sección IV: Analisis

¿Consideras que la visita fue satisfactoria para ambas partes? SI ☐ NO ☐
FAVOR DE EXPLICAR:

¿En tu opinión, será necesario ofrecer otro material que puede servirle al negocio para mejorar sus operaciones de acuerdo a la información que obtuviste en el taller?
SI ☐ NO ☐
FAVOR DE EXPLICAR:

¿Consideras que el ambiente de operaciones del negocio es aceptable o que las Autoridades ambientales deberán intervenir en el futuro? SI ☐ NO ☐
FAVOR DE EXPLICAR:

Iniciales de las Promotoras: _____ _____

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Reflection on success of the visit

Reflection on usefulness of material

Reflection on business operations and need for an agency visit

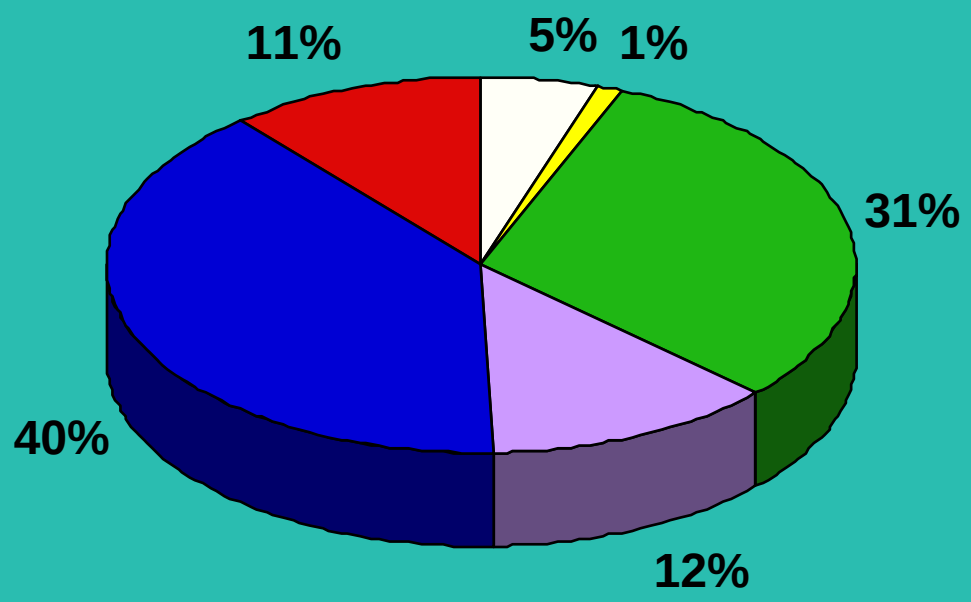
Pollution Prevention Workshop

- Automotive Service Association
- Arizona Department of Environmental Quality Pollution Prevention Section
- Equipment manufacturers
- Promotoras and SERI technical staff

Dagoberto Enriquez, host of workshop and owner of McElroy's Automotive

Liz Fairchild and Aminata Kilungo of SERI attending workshop

Results of Business Visits



- Intend to apply for Greenshop
- Bought aqueous parts washer
- Commited to program
- Attended workshop
- Listened, did not commit
- Not interested

Now We Have:

- Passion
- Skill set
- Ability
- Knowledge
- Educational material
- Organizational structure

to be agents of change in our community

Moving Forward

- Collect data from future business visits
- Conduct community mapping
- Continue our collaboration
- Continue learning
- Continue telling our stories, using our voices

Contact Information

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